

Cross-Cutting Management Issues

Construction Material Cost Trends

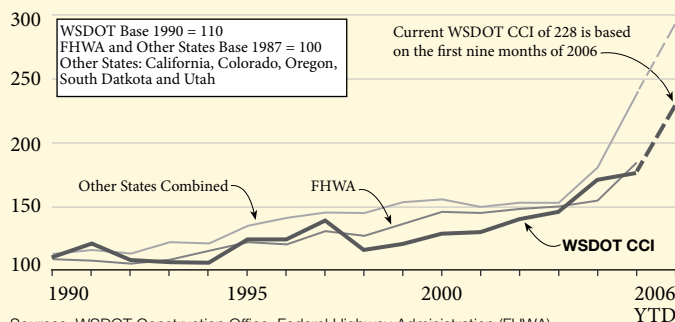
WSDOT prepares its construction cost estimates using historical information about market conditions drawn from recent bids. Like other state transportation departments, WSDOT must extrapolate for the future based on past records, not from a crystal ball of future market conditions. WSDOT accumulates construction cost information and calculates a Construction Cost Index (CCI). The CCI is then compared against the experience of other states. The graph below presents the past 16 years of CCI data for Washington State. This is plotted against the CCI of the Federal Highway Administration (FHWA) and a line representing the combined CCIs of several nearby western states: California, Colorado, Oregon, South Dakota, and Utah.

The average annual growth rate of the CCI from 1990 through 2001 was 1.5% per year. However, since 2001, the average growth rate has been 12% per year. During this period the CCI has been driven up by several factors, including: the increasing worldwide demand for construction materials; rising crude oil prices and other energy supply issues; and recent increases in national and international construction activity.

Construction Cost Index up 30% over 2005

WSDOT's CCI has increased 30% in the first three quarters of 2006 over the annual average for 2005, from 176 to 228. The driving force behind this increase is the rising costs of Hot Mix Asphalt (HMA). Of the seven materials WSDOT tracks in the CCI, HMA comprises almost half the weight of the index (see gray box). HMA prices rose 35% in the first three quarters of 2006 following increased crude oil prices and decreases in liquid asphalt production. (see June 30, 2006 *Gray Notebook*, p. 32 for more information)

Construction Cost Indices Washington State, FHWA, and Other States



Sources: WSDOT Construction Office, Federal Highway Administration (FHWA)
Note: WSDOT 2006 Index is for Quarters 1, 2 & 3; Other States 2006 Index based on Oregon and Utah 1, 2 & 3 quarter data; 3 quarter data not available for California, Colorado and South Dakota; 2006 data not available for FHWA.
Note: 2003 and 2004 WSDOT CCI data points adjusted to correct for spiking bid prices on structural steel.

WSDOT's CCI is a composite of unit price information from low bids on seven of the most commonly used construction materials. These items reflect a composite cost for a completed item of work and include the costs of labor, equipment, and materials. The following components (weighted as shown) are used to compute the CCI. (For more information, see the September 2005 *Gray Notebook*, p. 45).

Hot Mix Asphalt (48.5%)	Structural Steel (6.9%)
Structural Concrete (17.4%)	Steel Reinforcing Bar (5.4%)
Roadway Excavation (10.7%)	Concrete Pavement (3.2%)
Crushed Surfacing (7.9%)	

WSDOT Implements New Hot Mix Asphalt Escalation Clause

Currently, when contractors bid on WSDOT projects, they estimate the potential future cost of materials and build that risk into their bid. This results in higher bids from contractors when the construction materials market is volatile, as it is now. This practice also puts contractors at risk to lose money if their bids underestimate future costs. HMA costs are a particular concern: they are currently up 35% from 2005. WSDOT believes that contractors are beginning to lose their ability to manage risk in the face of rising HMA prices and a diminished liquid asphalt supply.

WSDOT, with advice from the Washington Asphalt Paving Association (WAPA), is implementing a Hot Mix Asphalt Escalation Clause on projects statewide. The escalation clause is designed to transfer some of the cost escalation risk from the contractor to the state, therefore reducing the effect of cost uncertainty on contractors' bids. There are two anticipated outcomes. First, WSDOT and WAPA anticipate this will result in contractors submitting lower bids, and ultimately lower overall project costs for the state, because contractors no longer have to inflate their HMA bids out of fear of underestimating future market prices. The second goal is to make contractors less vulnerable to losses due to sudden increases in market prices of HMA.

At a time when HMA prices are rising rapidly, contractors bidding on multi-year projects face the most risk because they must submit bid prices for HMA years before paving will begin. WSDOT's HMA escalation clause affects all multi-year projects that contain HMA. Contracts that contain the clause provide for an upward or downward adjustment in the price WSDOT pays for work on those projects. WSDOT will provide additional payment or receive a credit, depending on whether prices rise or fall. WSDOT implemented the clause in August 2006; a future *Gray Notebook* report will contain an analysis to determine how it has affected contractors' bid prices.